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Norris, McLaughlin & Marcus
30th Floor
220 East 42nd Street
New York, NY 10017

EXAMINER	
BAREFORD, KATHERINE A	

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Paper No. 20040226

Application Number: 09/902,055
Filing Date: July 10, 2001
Appellant(s): KEITE-TELGENBUSCHER ET AL.

Howard C. Lee
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed February 17, 2004.

(1) Real Party in Interest

A statement identifying the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

A statement identifying the related appeals and interferences which will directly affect or be directly affected by or have a bearing on the decision in the pending appeal is contained in the brief.

(3) Status of Claims

The statement of the status of the claims contained in the brief is correct.

(4) Status of Amendments After Final

No amendment after final has been filed.

(5) Summary of Invention

The summary of invention contained in the brief is correct.

(6) Issues

The appellant's statement of the issues in the brief is correct.

(7) Grouping of Claims

The appellant's statement in the brief that certain claims do not stand or fall together is not agreed with. In his Appeal Brief, as to the Grouping of the Claims, appellant indicates that

claims 1, 7, 8 and 11-15 stand or fall together, and that claims 3-6, 9, 10 and 17-19 can be treated separately on the merits. However, neither the Grouping of the Claims or the Arguments section of the Appeal Brief provide arguments as to why claims 3-6, 9, 10 and 17-19 should specifically be treated separately or arguments as to why these claims are separately patentable.

(8) Claims Appealed

The copy of the appealed claims contained in the Appendix to the brief is correct.

(9) Prior Art of Record

5,122,219	LUDWIG	6-1992
6,273,701	MORIARITY	8-2001
0 622 127 A1	EP	11-1994

(10) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1 and 3-19 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over Ludwig (US 5122219) in view of Moriarity (US 6273701).

Ludwig teaches a method of applying liquid or paste-like substances to a backing material. *Column 1, lines 5-10 and figure 1.* The material can be thermoplastic. *Column 1, lines 5-10.* The substance is applied using a die to coat at least part of the backing material traveling along the

die. *Column 3, lines 10-40 and figure 1 (the die would be coating head 5).* The die is provided with heating elements. *Column 3, lines 40-68 and figure 1.*

Claim 7, 15: the backing material is guided along an apparatus which produces counterpressure. *Figure 1 and column 3, lines 10-40.* This apparatus can be a roll. *Figure 1 and column 3, lines 10-40 (counterpressure roller 4).*

Claim 8: the substance can be applied by means of the die through a perforated cylinder onto the backing material. *Figure 1 and column 3, lines 10-40 (perforated cylinder 3).*

Claim 11, 14: the coating can be a thermoplastic polymer. *Column 1, lines 5-10.*

Ludwig teaches all the features of the claims except (1) the transverse bending of the die based on temperature differences in the die body (claim 1), (2) the die features (claims 1, 3-6, 9-10, 19) and (3) the specific materials and amounts (claims 12-13, 15-18)

Moriarity teaches an extrusion die system. *Figures 1-3 and column 2, lines 35-40.* The die is used to extrude a liquid/pasty substance to a backing material (polymer melt onto a roll, for example). *See column 5, lines 5-15 and column 7, lines 20-35.* The die lip, which is an integral part of the die body is flexed (i.e. bent) transversely to the direction of travel of the roll in multiple zones across the elongated portion (the longitudinal direction) of the die—thus providing the bending of the die body. *See figures 2-3 and column 6, lines 25-60 (note the discussion of "flexure zone 117").* This bending can be induced by temperature differences within the die body that come from multiple, separately controllable heaters embedded within the die body. *See figures 2-3 and column 6, lines 25-60 (the bending in flexure zone 117 is caused by embedded heaters 136, 138).* The heaters can be electrical heaters. *Column 6, lines 30-45 and figures 2-3 (note wires*

140,142). Bending can also occur through the use of a heat controlled actuator system. *See column 5, lines 5-30 and figures 1-3.*

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Ludwig to provide a thermal adjustment system that provides the claimed bending as suggested by Moriarity so as to provide optimum control of the extrudate dimensions from the die, because Ludwig teaches a system of coating by extruding heated coating material from a die, and Moriarity teaches a method of controlling extrudate dimensions when extruding heated coating material from a die using embedded electrical heating elements, which provide precise control of the die lip area. As a result, heating elements would be provided across the lip area of Ludwig (at the outlet slit), resulting in a series of separately controlled temperature zones across the longitudinal axis of the die that flex the die transversely to and against the direction of travel of the backing material based on the different temperatures from the heating elements within the die body. It further would have been obvious that the coating fluid provides part of the temperature control of the various zones, as in claim 4, since both references teach heating the dies and/or coating material to provide broad temperature control of the coating material, and the heated coating material would contact the die, providing at least some heat transfer. It further would have been obvious to move the die in its mounts, as in claim 5, with an expectation of desirable results, since it would be desired to clean the applicator device and load the substrate in start up procedure. It further would have been obvious that the bending would be controlled proportionate to the amount of the substance applied to the backing roll, as in claim 9, since this reflects the die gap width. It further would have been obvious to perform routine experimentation

to optimize the processing shear, as in claims 10 and 19, based on the die gap and coating material selected. It further would have been obvious to apply a hot-melt pressure sensitive adhesive, as in claim 16, to a substrate such as a roll or a belt with an adhesive surface, as in claims 12-13, using the teachings of Ludwig in view of Moriarity with an expectation of desirable coating results, since it is the Examiner's position that hot-melt thermoplastics as taught by Ludwig are well known to be used when providing hot-melt pressure sensitive adhesives and that it is well known to apply such materials to rolls or adhesive surfaces with silicone or fluorine compounds. As to the amount of coating material applied, as in claims 17-18, it is the Examiner's position that it would have been obvious to optimize the amounts of material applied passed on the final product to be produced.

Claims 1, 3-7 and 9-19 stand finally rejected under 35 U.S.C. 103(a) as being unpatentable over EP 622 127 A1 (Hereinafter '127) in view of Moriarity (US 6273701).

'127 teaches a method of applying a coating substance to a backing material. *Column 2, lines 5-30 and figure 2.* The material can be a hot-melt adhesive. *Column 1, lines 10-15.* The substance is applied using a die to coat at least part of the backing material traveling along the die. *Column 2, lines 10-30 and figure 2 (coating die 14).*

Claim 7, 15: the backing material can be guided along an apparatus which produces counterpressure. *Figure 2 and column 3, lines 40-55 (if the backing material is considered the*

substrate 30, then the counterpressure is provided by backing roller 36). This apparatus can be a roll. *Figure 2 and column 3, lines 40-55 (backing roller 36).*

Claim 11, 16: the coating can be a hot-melt adhesive. *Column 1, lines 10-15.*

Claims 12-13: the backing material can be a roll with an adhesive surface (in that a coating can be a fluorine coating (as in dependent claim 13)). *Figure 2 and column 3, line 40 through column 4, line 5 (if the backing material is considered to be application roller 26, the surface is adhesive (in that a coating can be a fluorine coating (as in dependent claim 13)), and if the backing material is substrate 30, the surface is adhesive as compared to roller 26).* The coating on the surface can be a fluorine coating (i.e. TEFLON). Column 3, line 55 through column 4, line 5.

'127 teaches all the features of the claims except (1) the transverse bending of the die based on temperature differences in the die body (claim 1), (2) the die features (claims 1, 3-6, 9-13, 19), (3) the thermoplastic (claims 11, 14) and (4) the amounts applied (claims 17-18).

Moriarity teaches an extrusion die system. *Figures 1-3 and column 2, lines 35-40.* The die is used to extrude a liquid/pasty substance to a backing material (polymer melt onto a roll, for example). *See column 5, lines 5-15 and column 7, lines 20-35.* The die lip, which is an integral part of the die body is flexed (i.e. bent) transversely to the direction of travel of the roll in multiple zones across the elongated portion (the longitudinal direction) of the die—thus providing the bending of the die body. *See figures 2-3 and column 6, lines 25-60 (note the discussion of "flexure zone 117").* This bending can be induced by temperature differences within the die body that come from multiple, separately controllable heaters embedded within the die body. *See figures 2-3 and column 6, lines 25-60 (the bending in flexure zone 117 is caused by embedded heaters 136,*

138). The heaters can be electrical heaters. *Column 6, lines 30-45 and figures 2-3 (note wires 140,142).* Bending can also occur through the use of a heat controlled actuator system. *See column 5, lines 5-30 and figures 1-3.*

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify '127 to provide a thermal adjustment system that provides the claimed bending as suggested by Moriarity so as to provide optimum control of the extrudate dimensions from the die, because '127 teaches a system of coating by extruding heated coating material from a die, and Moriarity teaches a method of controlling extrudate dimensions when extruding heated coating material from a die using embedded electrical heating elements, which provide precise control of the die lip area. As a result, heating elements would be provided across the lip area of '127 (at the outlet slit), resulting in a series of separately controlled temperature zones across the longitudinal axis of the die that flex the die transversely to and against the direction of travel of the backing material based on the different temperatures from the heating elements within the die body. It further would have been obvious that the coating fluid provides part of the temperature control of the various zones, as in claim 4, since the references teach heating coating material which would affect the temperature results in the zones (note the flow descriptions in Moriarity), and the heated coating material would contact the die, providing at least some heat transfer. It further would have been obvious to move the die in its mounts, as in claim 5, with an expectation of desirable results, since it would be desired to clean the applicator device and load the substrate in start up procedure. It further would have been obvious that the bending would be controlled proportionate to the amount of the substance applied to the backing roll, as in claim 9, since this

reflects the die gap width. It further would have been obvious to perform routine experimentation to optimize the processing shear, as in claims 10 and 19, based on the die gap and coating material selected. It further would have been obvious to perform routine experimentation to optimize the amount of coating applied to the applicator roll (backing material), as in claims 17-18, based on the coating used and the substance to be applied (note the suggested thickness and materials in '127). It further would have been obvious to use thermoplastic polymers, as in claims 11, 14 and 16 as the adhesive materials with an expectation of desirable coating results, given the teaching in '127 of using various hot-melt pressure sensitive adhesives, which are well known in the art to be thermoplastics.

(11) Response to Argument

ISSUE I: Rejection of claims 1 and 3-19 using Ludwig in view of Moriarity

Appellant's Arguments

(A) Appellant argues that every element of appellant's claims is not accounted for by Ludwig in view of Moriarity. Appellant argues that the combination of references does not provide that ". . . the die body is bent transversely to the direction of travel of the backing material and the bending is induced by temperature differences within the die body" (as required by claim 1). According to appellant, Moriarity makes no assertion that flexing is equivalent to bending (as is being asserted by the Examiner) and does not indicate that the die body itself changes in any way. Moriarity increases the rate of polymer flow in the dies and accomplishes this by widening the size of the exit opening 126 by controlling the temperature in lip 114, but

this widening is never characterized as being equivalent to "the die body being bent transversely to the direction of travel of the backing material". Moreover, according to appellant, all the changes in the exit opening occur within the die 110 itself, with no teaching or suggestion that the die body is bent transversely, as opposed to appellant's requirements.

(B) Appellant further argues that Ludwig teaches away from bending the body. If Ludwig's die were bent in any way, the planar surface would not be uniform and therefore, Ludwig would not produce the desired uniform coating. Ludwig plainly shows that there is contact between the substrate and the perforated cylinder (die body) and contact pressure roller at the time of coating, whereas Moriarity only shows contact between the substrate and die body at the time of coating. Appellant argues that the Examiner appeared to reply to this argument in her Advisory Action that because both Ludwig and Moriarity intended to provide a means for a more uniform coating, one could modify the teaching of Ludwig with Moriarity and obtain the desired uniform coating. However, there is no factual support for this assertion. Moreover, the invention of Ludwig did not represent some generic invention open to any means of modification, but was a specific improvement upon the prior art, where the uniformity was achieved by an improvement comprising that listed in claim 1 of Ludwig (as quoted in the paragraph bridging pages 4-5 of the Appeal Brief of Feb. 17, 2004). Appellant argues that given this specific set of instructions, the substitution of Moriarity even if permitted, would not allow Ludwig's invention to function as intended.

(C) Appellant further argues that there is no factual basis for a listing of obviousness assertions by the Examiner. Appellant specifically lists assertions by the Examiner that it would

have been obvious to (1) modify Ludwig to provide a thermal adjustment system, (2) that the coating fluid provides part of the temperature control of the various zones, (3) to move the die in its mounts, (4) that the bending would be controlled proportionate to the amount of the substance applied, (5) to apply hot-melt pressure sensitive adhesive, and (6) to optimize the amounts of material applied passed on the final product. At pages 5-7 of the Appeal Brief of Feb. 17, 2004, applicant provides arguments that there would be no suggestion to make these specific assertions.

(D) Appellant further argues that in light of the lack of evidence support for making the appropriate modifications as presented in the above arguments, the preponderance of the evidence suggests that appellant's invention is unobvious over the prior art, and thus it is more probable than not that the claims of the present invention are non-obvious over the prior art.

The Examiner's Response

(A) As to appellant's argument that not every element of appellant's claims is accounted for, the Examiner has reviewed this argument, however, this argument does not overcome the rejection of the claims. Moriarity clearly provides a die body that provides the suggestion, when combined with Ludwig, of the claimed requirement that ". . . the die body is bent transversely to the direction of travel of the backing material and the bending is induced by temperature differences within the die body" (as required by independent claim 1). This is demonstrated by figures 2-3 and the teaching at column 6, lines 25-60 of Moriarity. Moriarity teaches, for example, rod heaters 136 and 138 which are embedded in the lip of die body. These rod heaters increase or decrease the lip temperature in various longitudinal zones. The increasing

temperature increases the lateral fill in flow, which enables a higher pressure of polymer being extruded to act upon the opposing surfaces of the die lips 112 and 114 in the area of the higher temperature, causing a very slight additional flexure in the flexure zone 117 of the die lip 114 in the affected area to extrude more polymer therethrough. Thus, as a result of the temperature changes in the die body (the heaters are embedded, and therefore, inside the die body), the die lip, which is an integral part of the die body, is flexed in zones across the lip. While appellant argues that Moriarity does not assert that flexing is equivalent to bending, the common understanding of the meaning of the term flexing would be that the term means "bending". Furthermore, the die lip is an integral part of the die body, as shown by Figure 2, and therefore, a bending of a portion of the die lip is a bending of a portion of the die body. While appellant argues that the widening by Moriarity of exit opening 126 by controlling the temperature in lip 114 is not characterized by Moriarity as being equivalent to the claimed ". . . the die body is bent transversely to the direction of travel of the backing material", the Examiner disagrees for the reasons as discussed above. Moriarity demonstrates such features, regardless of the actual terminology used to described these features, such as using the term "flexure" rather than "bending". As to the "transverse" component of the bending requirement, this is clearly shown by the combination of the references. With the die placed as shown in Ludwig, facing counterpressure roller 4, the bending of the lip in the various longitudinal zones would be perpendicular to the radius of the counterpressure roll, which clearly corresponds to figure 3 and page 7, lines 4-10 and page 16, lines 10-15 of the specification, with that description of bending in accordance with the method of the invention.

(B) As to the argument that Ludwig teaches away from bending the die body, the Examiner has reviewed this argument, however, this argument does not overcome the rejection of the claims. The flexing of Moriarity is to correct for non-uniform coating and provide a more uniform coating extruding from the slit. Since Ludwig also wants a uniform coating, it would have been desired to have a uniform coating exiting from the slit of Ludwig. As to the specific requirements of the coating head of Ludwig, Ludwig provides (see column 3, lines 25-60, claim 1 and figure 1) that the curved contact surface of the coating head 5 presses against the inner surface 6 of the perforated cylinder 3, with a contact surface 8 formed around the outlet slit 7. The contact surface 8 of the coating head 5 has a radius r1 greater than the radius r of the cylinder 3, consequently deforming the cylinder slightly in the contact region. There is nothing in the teaching or requirements of Ludwig that would prevent there from being the slight flexure described at the lip area of Moriarity. Both references are concerned with extruding heated polymer materials from the slits of extruders to provide uniform coating. While Ludwig provides a contact area between the coating head surface and the cylinder, there is no requirement that this would prevent flexing of the die in a transverse action as claimed, since transverse action would occur perpendicular to the radius of the backing roll (which, as described at figure 3, page 7, lines 4-10 and page 16, lines 10-15 of the specification, provides transverse bending as claimed). Thus, flexing in the longitudinal zones of Moriarity would provide flexing "across" the zones of the die and transversely as claimed.

(C) As to the argument that there is "no factual basis" for the "would have been obvious" assertions by the Examiner, the Examiner has reviewed this argument, however, the argument

does not overcome the rejection in the claims. As to the assertions, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, as to the various different listed assertions:

(1) as to modifying Ludwig to provide a thermal adjustment system, in the ***Grounds of Rejection*** above, the Examiner provided that it would have been obvious to modify Ludwig to provide a thermal adjustment system that provides the claimed bending as suggested by Moriarity so as to provide optimum control of the extrudate dimensions from the die, because Ludwig teaches a system of coating by extruding heated coating material from a die, and Moriarity teaches a method of controlling extrudate dimensions when extruding heated coating material from a die using embedded electrical heating elements, which provide precise control of the die lip area. As a result, heating elements would be provided across the lip area of Ludwig (at the outlet slit), resulting in a series of separately controlled temperature zones across the longitudinal axis of the die that flex the die transversely to and against the direction of travel of the backing material based on the different temperatures from the heating elements within the die body.

Appellant argues that the desirability of having two temperature zones in the die body and having the die body bent because of differences of such temperature is not taught by either Ludwig or Moriarity. As discussed with regard to (A) above, it is the Examiner's position that the

temperature zones and die body bending due to differences of temperature is clearly taught by Moriarity. Furthermore, appellant argues that the simultaneous teaching of both concepts used in tandem is never taught by either Ludwig or Moriarity. As discussed with regard to (A) above, it is the Examiner's position that Moriarity teaches both concepts of the temperature zones and the bending of the die body because of differences of the temperature.

(2) as to modifying the references so that the coating fluid provides part of the temperature control of the various zones, in the ***Grounds of Rejection*** above, the Examiner provided that it would have been obvious that the coating fluid provides part of the temperature control of the various zones, as in claim 4, since both references teach heating the dies and/or coating material to provide broad temperature control of the coating material, and the heated coating material would contact the die, providing at least some heat transfer.

Appellant argues that Moriarity teaches away from this feature as it requires heating elements to the temperature and regulate the size of the exit openings and Ludwig does not offer recognition of using coating fluid to provide part of the temperature zone control. However, it is the Examiner's position that the heated fluid provides part of the temperature control at least to the extent that the liquid is heated, and would contact the die, providing at least some heat transfer that would have to be dealt with to when providing change of temperatures at different zones.

(3) as to moving the die in its mounts, in the ***Grounds of Rejection*** above, the Examiner provided that it would have been obvious to move the die in its mounts, as in claim 5, with an

expectation of desirable results, since it would be desired to clean the applicator device and load the substrate in start up procedure.

Appellant argues that there is no suggestion, teaching or motivation to have this modification from the respective specifications of Ludwig or Moriarity. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The Examiner notes that Ludwig and Moriarity do not specifically teach this feature. However, "knowledge generally available to one of ordinary skill in the art" would clearly include the fact that when coating a web as done by Ludwig, the web would have to be loaded and unloaded from the applicator device so as to provide a substrate to be coated and the device would have to be cleaned on occasion. As a result, one of ordinary skill in the art would need to configure the apparatus to allow for such necessary actions.

(4) as to controlling the bending proportionate to the amount of the substance applied, in the ***Grounds of Rejection*** above, the Examiner provided that it would have been obvious that the bending would be controlled proportionate to the amount of the substance applied to the backing roll, as in claim 9, since this reflects the die gap width.

Appellant argues that there is no evidence of bending the die body from either reference, and at best the relationship between proportionality and the amount of substance applied only

resides in the teaching of Moriarity, which suggests a relationship between the amount of substance and their exit opening, not the die body itself. As discussed with regard to (A) above, it is the Examiner's position that the bending of the die lip, and therefore, the die body, is clearly taught by Moriarity. The bending of the die lip changes the exit opening, providing the proportionate change in the amount of substance being applied.

(5) as to the suggestion to apply hot-melt pressure sensitive adhesive, in the ***Grounds of Rejection*** above, the Examiner provided that it would have been obvious to apply a hot-melt pressure sensitive adhesive, as in claim 16, to a substrate such as a roll or a belt with an adhesive surface, as in claims 12-13, using the teachings of Ludwig in view of Moriarity with an expectation of desirable coating results, since it is the Examiner's position that hot-melt thermoplastics as taught by Ludwig are well known to be used when providing hot-melt pressure sensitive adhesives and that it is well known to apply such materials to rolls or adhesive surfaces with silicone or fluorine compounds.

The Examiner notes that appellant states that as to this issue "this point can be conceded to the examiner".

(6) as to the suggestion to optimize the amounts of material applied passed on the final product, in the ***Grounds of Rejection*** above, the Examiner provided that as to the amount of coating material applied, as in claims 17-18, it is the Examiner's position that it would have been obvious to optimize the amounts of material applied passed on the final product to be produced.

Appellant argues that neither Ludwig or Moriarity recognizes that the amount of material passed is a results effective variable. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The Examiner notes that Ludwig and Moriarity do not specifically teach this feature. However, "knowledge generally available to one of ordinary skill in the art" would clearly include the fact that when coating a web as done by Ludwig, an amount of coating would have to be applied in a controlled manner so as to achieve the desired uniform coating. While Ludwig does not teach specific amounts of coating, one of ordinary skill in the art would not blindly or randomly apply amounts of coating to a web, but rather would use amounts configured or optimized for the specifically desired final product.

(D) As to appellant's arguments that the preponderance of the evidence suggests that appellant's invention is unobvious over the prior art, and thus it is more probable than not that the claims of the present invention are non-obvious over the prior art, the Examiner has reviewed this argument, however, this argument does not overcome the rejection of the claims. As discussed with regard to sections (A), (B) and (C) above, applicant has not overcome the rejection of the claims, and therefore, the rejection is maintained.

ISSUE II: Rejection of claims 1 and 3-19 using EP 622 127 A1 in view of

Moriarity

Appellant's Arguments

Appellant argues that the arguments presented above with respect to Ludwig and Moriarity are to be considered repeated here. Appellant argues that this is a duplicative rejection that was unnecessary as EP 622 127 A1 (hereinafter '127) is even further removed from the present invention than Ludwig as there is no recitation of a heating element, much less multiple temperature zones as in the claimed invention.

The Examiner's Response

The Examiner has reviewed arguments (A), (B), (C) and (D) as discussed above with regard to the use of '127:

(A) As to appellant's argument that not every element of appellant's claims is accounted for, the Examiner has reviewed this argument, however, this argument does not overcome the rejection of the claims. For the purposes of this section, The Examiner has reviewed the arguments as they would apply using '127 (rather than Ludwig). Moriarity clearly provides a die body that provides the suggestion, when combined with '127, of the claimed requirement that ". . . the die body is bent transversely to the direction of travel of the backing material and the bending is induced by temperature differences within the die body" (as required by independent claim 1). This is demonstrated by figures 2-3 and the teaching at column 6, lines 25-60 of Moriarity. Moriarity teaches, for example, rod heaters 136 and 138 which are embedded in the lip of die body. These rod heaters increase or decrease the lip temperature in various longitudinal zones. The increasing temperature increases the lateral fill in flow, which enables a higher

pressure of polymer being extruded to act upon the opposing surfaces of the die lips 112 and 114 in the area of the higher temperature, causing a very slight additional flexure in the flexure zone 117 of the die lip 114 in the affected area to extrude more polymer therethrough. Thus, as a result of the temperature changes in the die body (the heaters are embedded, and therefore, inside the die body), the die lip, which is an integral part of the die body, is flexed in zones across the lip. While applicant argues that Moriarity does not assert that flexing is equivalent to bending, the common understanding of the meaning of the term flexing would be that the term means "bending". Furthermore, the die lip is an integral part of the die body, as shown by Figure 2, and therefore, a bending of a portion of the die lip is a bending of a portion of the die body. While appellant argues that the widening by Moriarity of exit opening 126 by controlling the temperature in lip 114 is not characterized by Moriarity as being equivalent to the claimed ". . . the die body is bent transversely to the direction of travel of the backing material", the Examiner disagrees for the reasons as discussed above. Moriarity demonstrates such features, regardless of the actual terminology used to described these features, such as using the term "flexure" rather than "bending". As to the "transverse" component of the bending requirement, this is clearly shown by the combination of the references. For example, when the die is placed as shown in figure 2 of '127, the movement of the die body is clearly transverse to, or across, the movement of the web shown being unwound from roll 32 and wound on roll 34.

(B) As to the argument that Ludwig teaches away from bending the die body, the Examiner has reviewed this argument, however, this argument does not overcome the rejection of the claims. For the purposes of this section, the Examiner has reviewed these arguments as they

would apply using '127 (rather than Ludwig). The flexing of Moriarity is to correct for non-uniform coating and provide a more uniform coating extruding from the slit. '127 specifically wants a uniform extrusion and states that the features of the die, including "the die opening dimensions", etc. can be adjusted by increasing or decreasing to provide a smooth even extrusion of the coating materials (see column 5, lines 30-50). Furthermore, the dies of Moriarity and '127 are provided in a free standing format in relation to the surface to be impacted with the extrudate. See figure 1 of Moriarity and Figure 2 of '127. Thus, the die features of '127 would in no way teach against using the die flexing of Moriarity.

(C) As to the argument that there is "no factual basis" for the "would have been obvious" assertions by the Examiner, the Examiner has reviewed this argument, however, the argument does not overcome the rejection in the claims. For the purposes of this section, the Examiner has reviewed these arguments as they would apply using '127 (rather than Ludwig). As to the assertions, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, as to the various different listed assertions:

(1) as to modifying '127 to provide a thermal adjustment system, in the ***Grounds of Rejection*** above, the Examiner provided that it would have been obvious to modify '127 to provide a thermal adjustment system that provides the claimed bending as suggested by Moriarity

so as to provide optimum control of the extrudate dimensions from the die, because '127 teaches a system of coating by extruding heated coating material from a die, and Moriarity teaches a method of controlling extrudate dimensions when extruding heated coating material from a die using embedded electrical heating elements, which provide precise control of the die lip area. As a result, heating elements would be provided across the lip area of '127 (at the outlet slit), resulting in a series of separately controlled temperature zones across the longitudinal axis of the die that flex the die transversely to and against the direction of travel of the backing material based on the different temperatures from the heating elements within the die body.

Appellant argues that the desirability of having two temperature zones in the die body and having the die body bent because of differences of such temperature is not taught by either '127 or Moriarity. As discussed with regard to (A) above, it is the Examiner's position that the temperature zones and die body bending due to differences of temperature is clearly taught by Moriarity. Furthermore, appellant argues that the simultaneous teaching of both concepts used in tandem is never taught by either '127 or Moriarity. As discussed with regard to (A) above, it is the Examiner's position that Moriarity teaches both concepts of the temperature zones and the bending of the die body because of differences of the temperature.

(2) as to modifying the references so that the coating fluid provides part of the temperature control of the various zones, in the *Grounds of Rejection* above, the Examiner provided that it would have been obvious that the coating fluid provides part of the temperature control of the various zones, as in claim 4, since the references teach heating coating material

which would affect the temperature results in the zones (note the flow descriptions in Moriarity), and the heated coating material would contact the die, providing at least some heat transfer.

Appellant argues that Moriarity teaches away from this feature as it requires heating elements to the temperature and regulate the size of the exit openings and ~~Ludwig~~ '127 does not offer recognition of using coating fluid to provide part of the temperature zone control. However, it is the Examiner's position that the heated fluid provides part of the temperature control at least to the extent that the liquid is heated, and would contact the die, providing at least some heat transfer that would have to be dealt with to when providing change of temperatures at different zones.

(3) as to moving the die in its mounts, in the ***Grounds of Rejection*** above, the Examiner provided that it would have been obvious to move the die in its mounts, as in claim 5, with an expectation of desirable results, since it would be desired to clean the applicator device and load the substrate in start up procedure.

Appellant argues that there is no suggestion, teaching or motivation to have this modification from the respective specifications of '127 or Moriarity. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The Examiner notes that '127 and Moriarity do not specifically teach this feature. However, "knowledge generally available to

one of ordinary skill in the art" would clearly include the fact that when coating a web as done by '127, the web would have to be loaded and unloaded from the applicator device so as to provide a substrate to be coated and the device would have to be cleaned on occasion. As a result, one of ordinary skill in the art would need to configure the apparatus to allow for such necessary actions.

(4) as to controlling the bending proportionate to the amount of the substance applied, in the *Grounds of Rejection* above, the Examiner provided that it would have been obvious that the bending would be controlled proportionate to the amount of the substance applied to the backing roll, as in claim 9, since this reflects the die gap width.

Appellant argues that there is no evidence of bending the die body from either reference, and at best the relationship between proportionality and the amount of substance applied only resides in the teaching of Moriarity, which suggests a relationship between the amount of substance and their exit opening, not the die body itself. As discussed with regard to (A) above, it is the Examiner's position that the bending of the die lip, and therefore, the die body, is clearly taught by Moriarity. The bending of the die lip changes the exit opening, providing the proportionate change in the amount of substance being applied.

(5) as to the suggestion to apply hot-melt pressure sensitive adhesive, in the *Grounds of Rejection* above, the Examiner provided that it would have been obvious to use thermoplastic polymers, as in claims 11, 14 and 16 as the adhesive materials with an expectation of desirable coating results, given the teaching in '127 of using various hot-melt pressure sensitive adhesives, which are well known in the art to be thermoplastics.

The Examiner notes that appellant states that as to this issue "this point can be conceded to the examiner".

(6) as to the suggestion to optimize the amounts of material applied passed on the final product, in the ***Grounds of Rejection*** above, the Examiner provided that it would have been obvious to perform routine experimentation to optimize the amount of coating applied to the applicator roll (backing material), as in claims 17-18, based on the coating used and the substance to be applied (note the suggested thickness and materials in '127).

Appellant argues that neither '127 or Moriarity recognizes that the amount of material passed is a results effective variable. The examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). The Examiner notes that '127 and Moriarity do not specifically teach this feature. However, "knowledge generally available to one of ordinary skill in the art" would clearly include the fact that when coating a web as done by '127, an amount of coating would have to be applied in a controlled manner so as to achieve the desired uniform coating. '127 further teaches that various feature of the die can be adjusted based on the use different coating materials (column 5, lines 30-50) and gives an exemplary applied coating thickness (column 7, lines 20-30). While '127 does not teach specific amounts of coating, one

of ordinary skill in the art would not blindly or randomly apply amounts of coating to a web, but rather would use amounts configured or optimized for the specifically desired final product.

(D) As to appellant's arguments that the preponderance of the evidence suggests that appellant's invention is unobvious over the prior art, and thus it is more probable than not that the claims of the present invention are non-obvious over the prior art, the Examiner has reviewed this argument, however, this argument does not overcome the rejection of the claims. As discussed with regard to sections (A), (B) and (C) above, applicant has not overcome the rejection of the claims, and therefore, the rejection is maintained.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

KATHERINE A. BAREFORD
PRIMARY EXAMINER
GROUP ~~1100~~ 1700

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Conferees
Shrive P. Beck, SPE Art Unit 1762
Glenn Caldarola, SPE Art Unit 1764

Norris, McLaughlin & Marcus
30th Floor
220 East 42nd Street
New York, NY 10017